



**ICORR WALES & SOUTH-WEST ENGLAND BRANCH**  
Online via TEAMS

**Wednesday 11<sup>th</sup> December 2024, Start Time: 13:00pm (UK Time)**

For Registration (use LINK below):

[Event Registration](#)



Event is Free of Charge to attend. Link will be sent following registration.

**Corrosion and Ethics: Navigating Heritage Preservation Challenges**

**Speakers: Dr Nicola Emmerson, Cardiff University  
Dr Paul Lambert, Mott MacDonald**

**Event Programme:**

13.00 – 13:10: Introductions

13:10 – 13:40: Technical Presentation - Nicola Emmerson

13:40 – 14:10: Technical Presentation – Paul Lambert

14:10 – 14:30: Q&A

**The Talks:**

**Corrosion Science for Heritage Contexts**



From historic iron bridges or ships to collections of many thousands of archaeological small finds, conservators safeguard metal heritage for future generations. Drawing on the principles of corrosion science applied to heritage contexts, we seek to find preservation solutions which comply with the ethical codes that govern our profession. This presentation explains the constraints that conservators face when designing corrosion

prevention strategies which preserve as much of the original historic material as possible whilst maintaining the intangible values in the object. Through examples of research that has taken

place at Cardiff University on behalf of heritage partner organisations, the need for collaboration between corrosion scientists and conservators is highlighted.

## **Cathodic Protection of Heritage Steel-Framed Buildings**

The corrosion of iron and steel framed structures, particularly those from the late 19th and early 20th century, is resulting in serious damage to the integrity and appearance of many important structures.

Conventional repair technologies are expensive and disruptive and can result in large-scale removal of original material for replacement with modern alternatives. Depending upon the causes of the deterioration, such traditional repair methodologies may not provide a satisfactory extension of service life.

Cathodic protection, dating back to 1824, represents the first engineered solution to the problems of corrosion. Developments in anode design and control/monitoring hardware have made the technique applicable to both historic and more modern steel framed structures in a manner that is proving acceptable both commercially and from a repair and conservation viewpoint.



This presentation outlines the practicalities of steel frame cathodic protection and the general approaches available for its application. It will also cover recent research to establish many of the design and operational characteristics of the technique and develop new, simpler to install and more durable anode systems.

Nicola Emmerson is a trained practical conservator with a focus on preservation of metallic heritage. Her PhD examined protective coatings for historic wrought iron, and she works with museums on their desiccated storage protocols for archaeological metalwork collections. She teaches practical conservation and heritage science research at Cardiff University and is currently Coordinator of the Metals Working Group of the International Council of Museums Committee for Conservation and Vice-Chair of the Working Party 21 (Corrosion of Archaeological and Historical Artefacts) of the European Federation of Corrosion.



Paul Lambert has over 40 years' experience in the investigation of structural durability and degradation and in the development of novel remedial techniques for civil and building structures, most recently as Head of Materials & Corrosion at Mott MacDonald. He became one of three inaugural Mott MacDonald Fellows in 2023. Paul is Visiting Professor at the Centre for Infrastructure Management at Sheffield Hallam University where he carries out research into novel materials and repair technologies.

#### **Additional Information:**

- Registration information will be shared with our Branch volunteers to help facilitate the event.

**For Continuing Professional Development (CPD) or to join our Mailing List, request by email to: [swchair@icorr.org](mailto:swchair@icorr.org)**

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